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EXAMINER

COLBERT, ELLA

ART UNIT PAPER NUMBER

3624

DATE MAILED: 05/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/323,512

Applicant(s)

KINDIG ET AL.

Examiner

Ella Colbert

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*ML*

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3-8,10-12,14-30 and 32-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-8,10-12,14-30 and 32-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Claims 1, 3-8, 10-12, 14-30, and 32-38 are pending. Claims 1, 3-4, 8, 10, 12, 14, 20, 30, and 36-38 have been amended and claims 2, 9, 13, and 31 have been canceled in this communication filed 03/15/04 entered as Amendment D, paper no. 22.
2. The Associate Power of Attorney filed 03/15/03 has been entered as paper no. 23.
3. The previous 35 U.S.C. 112 second paragraph rejection of claims 1, 8, 12, 20, 30, 36-38 has been overcome by Applicants' amendment to claims 1, 8, 12, 20, 30, and 36-38 and is hereby withdrawn.
4. The claim objection to claims 2, 9, 12, 30, and 31 has been overcome by Applicants' amendment to claims 2, 9, 12, 30, and 31 and is hereby withdrawn.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claims 36 and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 36 and 37 recite "primary storage and/or the secondary storage...". It is unclear whether Applicants' mean "primary storage and the secondary storage ..." or "primary storage or the secondary storage ...". Clarification in the claim language is respectfully requested.

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***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 3, 4, 30, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over (US 6,442,553) Take in view of (US 5,594,881) Fecteau et al, hereafter Fecteau and further in view of (US 5,893,120) Nemes.

With respect to claims 1 and 30, Take teaches receiving a new data record and a key that is associated with the new data record (col. 1, lines 36-44); identifying one of the sections based upon the associated key of the new data record (col. 2, lines 27-35); determining if said new data record fits in an unused space on said identified section (col. 1, lines 45-63); if said new data record fits in said unused space, then storing said new record in said identified section (col. 2, lines 40-50).

Take failed to teach, if a size of said new data record is greater than a size of said unused space, then ranking all data records on said identified section according to a ranking function and summing sizes of said all data records below rank of said new data record; if said sum is not greater than said size of said new data record, then ending process; and storing the new data record in the identified section.

Fecteau teaches, if a size of said new data record is greater than a size of said unused space, then ranking all data records on said identified section according to a ranking function (col. 6, lines 52-64 and col. 7, lines 1-10); summing sizes of said all data records below rank of said new data record (col. 7, lines 48-67 and fig. 6); if said sum is not greater than said size of said new data record, then ending process; and storing the new data record in the identified section (col. 8, lines 11-19). It would have

been obvious to one having ordinary skill in the art at the time the invention was made to have a size of said new data record is greater than a size of said unused space, then ranking all data records on said identified section according to a ranking function and summing sizes of said all data records below rank of said new data record; if said sum is not greater than said size of said new data record, then ending process; and storing the new data record in the identified section and to modify in Take because such a modification would allow Take to free storage space by the operating system "paging out" least recently used pages (ranking) and their various sizes.

Take fails to teach, if said sum is greater than said size of said new data record, then deleting one or more data records from the identified section. Nemes teaches, if sum is greater than said size of said new data record, then deleting one or more data records from the identified section if the identified section (col. 5, lines 16-34 and lines 53-57). It would have been obvious to one having ordinary skill in the art at the time the invention was made to if said sum is greater than said size of said new data record, then deleting one or more data records from the identified section and to modify in Take because such a modification would allow Take's system to save space since the space in a database is limited to the amount of data contained in a certain number of records in the database.

With respect to claims 3 and 32, Take fails to teach the ranking function is a least recently used algorithm. Nemes teaches the ranking function is a least recently used algorithm (col. 7, lines 65-67 and col. 8, lines 1-15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the ranking function as a least recently used algorithm and to modify in Take because such a modification would allow Take's system to have a finite sequence of steps (which is well known in the art) for performing the ranking function.

With respect to claim 4, Take teaches the ranking function is a function of the statistical properties of the data being stored (col. 8, lines 35-43).

9. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Take and Nemes in view of (US 5,809,494) Nguyen.

With respect to claim 5, Take and Nemes fail to teach, each of the plurality of sections is an integer multiple of the page size that is used by an operating system to transfer data between a primary storage and a secondary storage. Nguyen teaches each of the plurality of sections is an integer multiple of the page size that is used by an operating system to transfer data between a primary storage and a secondary storage (col. 1, lines 33-39, col. 4, lines 39-67, and col. 5, lines 1-4). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have each of the plurality of sections is an integer multiple of the page size that is used by an operating system to transfer data between a primary storage and a secondary storage and to modify in Take because such a modification would allow Take to have a data structure to enable the rapid retrieval of items by using a "hash table" and to have a database to be searched with a hash table that fits into primary storage (such as RAM) with the item being sought accessed in secondary storage.

With respect to claim 6, Take and Nguyen fail to teach the sections are about the same page size that is used by an operating system to transfer data between a primary storage and a secondary storage. Nemes teaches of the sections is about the same page size that is used by an operating system to transfer data between a primary storage and a secondary storage (col. 1, lines 66-67, col. 2, lines 1-15 and lines 53-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the sections is about the same page size that is used by an

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operating system to transfer data between a primary storage and a secondary storage and to modify in Take because such a modification in Take would allow Take's system to save space since the space in a database since the space in a database is limited to the amount of data contained in a certain number of records.

With respect to claim 7, Take fails to teach, additionally comprising allocating a contiguous memory space to contain each of the sections. Nguyen teaches, additionally comprising allocating a contiguous memory space to contain each of the sections (col. 4, lines 39-54). Nemes teaches additionally comprising allocating a contiguous memory space to contain each of the sections (col. 1, lines 66-67 and col. 2, lines 1-15 and lines 53-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to allocate a contiguous memory space to contain each of the sections and to modify in Take because such a modification would allow Take to have the number of memory blocks with each block accommodating information with respect to a range of hash values.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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11. Claims 8, 10, 11, and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over (US 6,442,553) Take in view of (US 5,594,881) Fecteau et al, hereafter Fecteau and in view of (US 5,809,494) Nguyen and further in view of (US 5,893,120) Nemes.

With respect to claim 8, Take teaches, receiving a new data record and a key that is associated with the new data record (col. 1, lines 36-44); identifying a section from a plurality of sections, the identifying based upon the associated key of the new data record (col. 2, lines 27-35); determining if said new data record fits in an unused space on said identified section (col. 1, lines 45-63).

Take failed to teach, if said new data record fits in said unused space, then storing said new data record in said identified section; if a size of said new data record is greater than a size of said unused space, then ranking all data records on said identified section according to a ranking function; summing sizes of said all data records below rank of said new data record; if said sum is not greater than said size of said new data record, then ending process; and storing the new data record in the identified section.

Fecteau teaches, if said new data record fits in said unused space, then storing said new data record in said identified section (col. 6, lines 3-34); if a size of said new data record is greater than a size of said unused space, then ranking all data records on said identified section according to a ranking function (col. 6, lines 53-64, col. 7, lines 1-9, and fig. 5); summing sizes of said all data records below rank of said new data record (col. 7, lines 29-35); if said sum is not greater than said size of said new data record, then ending process (col. 9, lines 19-30); and storing the new data record in the identified section (col. 9, lines 31-46). It would have been obvious to one having ordinary skill in the art at the time the invention was made to if said new data record fits



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in said unused space, then storing said new data record in said identified section; if a size of said new data record is greater than a size of said unused space, then ranking all data records on said identified section according to a ranking function; summing sizes of said all data records below rank of said new data record; if said sum is not greater than said size of said new data record, then ending process; and storing the new data record in the identified section and to modify in Take because such a modification would allow Take's system to save space since the space in a database is limited to the amount of data contained in a certain number of records in the database.

With respect to claim 10, Take and Fecteau failed to teach, the ranking scheme identifies which ones of the data records are the least recently used. Nguyen teaches, the ranking scheme identifies which ones of the data records are the least recently used (col. 4, lines 59-67 and col. 5, lines 1-12). Nemes teaches, the ranking scheme identifies which ones of the data records are the least recently used (col. 6, lines 9-11). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the ranking scheme identifies which ones of the data records are the least recently used and to modify in Take because such a modification would allow Take to have the hashed data for successive records accumulated in each memory-block until it fills.

With respect to claim 11, Take, Fecteau, and Nguyen failed to teach the sections are about the same size that is used by an operating system to transfer data between a primary storage and a secondary storage. Nemes teaches of the sections is about the same page size that is used by an operating system to transfer data between a primary storage and a secondary storage (col. 1, lines 66-67, col. 2, lines 1-15 and lines 53-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the sections is about the same page size that is used by an

operating system to transfer data between a primary storage and a secondary storage and to modify in Take because such a modification in Take would allow Take's system to save space since the space in a database since the space in a database is limited to the amount of data contained in a certain number of records.

With respect to claim 33, Take, Fecteau, and Nemes failed to teach, the database occupies a single contiguous physical memory space. Nguyen teaches, the database occupies a single contiguous physical memory space (col. 2, lines 45-67). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the database occupy a single contiguous physical memory space and to modify in Take because such a modification would allow Take to have the number of memory blocks with each block accommodating information with respect to a range of hash values.

With respect to claim 34, Take, Fecteau, and Nemes failed to teach, the size of each of the sections is an integer multiple to the page size that is used by an operating system to transfer data between a primary storage and a secondary storage. Nguyen teaches each of the plurality of sections is an integer multiple of the page size that is used by an operating system to transfer data between a primary storage and a secondary storage (col. 1, lines 33-39, col. 4, lines 39-67, and col. 5, lines 1-4). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the size of each of the sections is an integer multiple of the page size that is used by an operating system to transfer data between a primary storage and a secondary storage and to modify in Take because such a modification would allow Take to have a data structure to enable the rapid retrieval of items by using a "hash table" and to have a database to be searched with a hash table that fits into primary storage (such as RAM) with the item being sought accessed in secondary storage.

With respect to claim 35, Take, Fecteau, and Nguyen fail to teach the size of each of the sections is about equal to the page size that is used by an operating system to transfer data between a primary storage and a secondary storage. Nemes teaches the size of each of the sections is about equal to the page size that is used by an operating system to transfer data between a primary storage and a secondary storage (col. 1, lines 66-67, col. 2, lines 1-15 and lines 53-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the size of each of the sections to be about equal to the page size that is used by an operating system to transfer data between a primary storage and a secondary storage and to modify in Take because such a modification in Take would allow Take's system to save space since the space in a database since the space in a database is limited to the amount of data contained in a certain number of records.

12. Claims 12 and 14-29 are rejected as being unpatentable over (US 5,809,494) Nguyen and (US 6,442,553) Take in view of (US 5,893,120) Nemes and further in view of (US 5,594,881) Fecteau.

With respect to claims 12 and 20, Nguyen teaches a plurality of sections, each of the sections being about the same memory size that is used by an operating system to transfer data between a primary storage and a secondary storage (col. 3, lines 1-8). Nguyen failed to teach, a control program which receives a request for the storage of a data record, the control program selecting one of the sections based upon a key and storing the data record in the selection section. Take teaches, a control program which receives a request for the storage of a data record, the control program selecting one of the sections based upon a key and storing the data record in the selection section (col. 4, lines 44-56). Nguyen and Take failed to teach, wherein the control program determines if said data record fits in said unused space on said selected section; and

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determines if said record fits in said unused space, then storing said data record in said selected section

Nemes teaches, wherein the control program determines if said data record fits in said unused space on said selected section; and determines if said record fits in said unused space, then storing said data record in said selected section (col. 6, lines 9-33). Nguyen, Take, and Nemes failed to teach, if a size of said data record is greater than a size of said unused space, then ranks all data records on said selected section according to a ranking function; sums sizes of said all data records below rank of said data record; if said sum is not greater than said size of said data record, then ends process; and if sum is greater than said size of data record, then deletes one or more data records from the selected section and stores the data record in the selected section.

Fecteau teaches, if a size of said data record is greater than a size of said unused space, then ranks all data records on said selected section according to a ranking function (col. 7, lines 48-60); sums sizes of said all data records below rank of said data record (col. 8, lines 37-56); if said sum is not greater than said size of said data record, then ends process (col. 9, lines 19-30); and if sum is greater than said size of data record, then deletes one or more data records from the selected section and stores the data record in the selected section (col. 10, lines 36-50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the control program determines if said data record fits in said unused space on said selected section; determines if said record fits in said unused space, then storing said data record in said selected section and to modify in Nguyen because such a modification would allow Nguyen to perform an on-the-fly removal of the expired record from the list and the return of storage it occupies to the system storage pool.

With respect to claims 14 and 21, Nguyen teaches, the ranking function determines a last access time for each of the data records or the selected sections (3, lines 9-19).

With respect to claims 15 and 23, Nguyen teaches at least one of the sections includes at least one item of section information (col. 3, lines 20-32).

With respect to claims 16 and 24, Nguyen teaches, the section information includes the number of data records that are contained in the section (col. 3, lines 33-54).

With respect to claims 17 and 25, Nguyen teaches, the section information includes an offset from the beginning of the section to the first unused position within the section (col. 5, lines 13-27).

With respect to claims 18 and 26, Nguyen teaches, the section information includes a section number that is associated with the section (col. 4, lines 6-18).

With respect to claims 19 and 27, Nguyen, Take, Nemes, and Fecteau failed to teach, comprising a client application which provides the storage request of the data record and the key to the control program, but it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a client application which provides the storage request of the data record and to modify in Nguyen because such a modification would allow Nguyen's system to have interfaces which are related functions (for example providing a storage request or the key to a control program) through which a client application accesses the service of a server application which is well known in the art.

With respect to claim 22, Nguyen, Take, and Fecteau failed to teach, each of the data records stores at least one user profile. Nemes teaches, each of the data records stores at least one user profile (col. 4, lines 26-37). It would have been obvious to one

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having ordinary skill in the art at the time the invention was made to have each of the data records store at least one user profile and to modify in Nguyen because such a modification in Nguyen's system would allow Nguyen's operating system to coordinate the activities of the computer system including the storage of data records with a user profile.

With respect to claim 28, Nguyen teaches each of the plurality of sections is an integer multiple of the page size that is used by an operating system to transfer data between a primary storage and a secondary storage (col. 1, lines 33-39, col. 4, lines 39-67, and col. 5, lines 1-4).

With respect to claim 29, Nguyen teaches, the size of each of the sections is about equal to the transfer size that is used by an operating system to transfer data between a primary storage and a secondary storage (col. 2, lines 50-65 and col. 5, lines 6-29).

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over (US 5,809,494) Nguyen in view of (US 5,594,881) Fecteau et al, hereafter Fecteau

With respect to claims 36 and 37, Nguyen teaches, a primary storage (col. 1, lines 66-67 and col. 2, lines 1-4); a secondary storage having a plurality of pages (col. 2, lines 4-9); a plurality of sections, wherein each of the sections is adapted to contain one

or more data records, and wherein each of the sections resides in the secondary storage on one of the plurality of pages (col. 3, lines 1-32); and a control program which receives a request for the retrieval of a data record, the control program retrieving the data record from the secondary storage and storing the data record in the primary storage, wherein the retrieval operation reads at most one page from the secondary storage (col. 4, lines 6-29, col. 6, lines 61-67, and col. 7, lines 1-12); a database structure having a plurality of sections, each of the sections residing on one of the pages in the primary storage and/or the secondary storage (col. 2, lines 1-15); and a database manager which receives requests from the client application to store a data record in the database data structure, wherein the database manager selects one of the sections and stores the data record in the selected section, wherein the database manager: determines if said data record fits in an unused space on said selected section (col. 2, lines 34-67).

Nguyen failed to teach, determines if said data record fits in said unused space, then stores said data record in said selected section; determines if a size of said data record is greater than a size of said unused space, then ranks all data records on said selected section according to a ranking function; sums sizes of said all data records below rank of said data record; if sum is not greater than said size of said data record, then ends process; and if said sum is greater than said size of said data record, then deletes one or more data records from the selected section and stores the data record in the selected section.

Fecteau teaches, determines if said data record fits in said unused space, then stores said data record in said selected section (col. 6, lines 3-34); determines if a size of said data record is greater than a size of said unused space, then ranks all data records on said selected section according to a ranking function (col. 6, lines 53-64, col.

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7, lines 1-9, and fig. 5); sums sizes of said all data records below rank of said data record; if sum is not greater than said size of said data record, then ends process (col. 7, lines 29-35); and if said sum is greater than said size of said data record, then deletes one or more data records from the selected section and stores the data record in the selected section (col. 10, lines 36-50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the control program determines if said data record fits in said unused space on said selected section; determines if said record fits in said unused space, then storing said data record in said selected section and to modify in Nguyen because such a modification would allow Nguyen to perform an on-the-fly removal of the expired record from the list and the return of storage it occupies to the system storage pool.

15. Claim 38 is rejected as being unpatentable over (US 5,809,494) Nguyen and in view of (US 5,893,120) Nemes.

With respect to claim 38, Nguyen teaches, a client application (col. 4, lines 19-29); a primary storage comprising a plurality of pages (col. 1, lines 66-67 and col. 2, lines 1-4); a secondary storage comprising a plurality of pages (col. 2, lines 4-9); and a database data structure having a plurality of sections, each of the sections residing on one of the pages in the primary storage and/or the secondary storage (col. 2, lines 1-15 and lines 50-67). Nguyen fails to teach a caching subsystem for copying pages from the primary secondary storage to the pages in the primary storage and vice-versa. Nemes teaches, a caching subsystem for copying pages from the primary secondary storage to the pages in the primary storage and vice-versa (col. 8, lines 22-44). Nguyen fails to teach, the selected section contains sufficient unused space to hold the data record, and wherein if the section does not have sufficient space, the database manager removes selected data records according to a ranking function. Nemes



teaches, the selected section contains sufficient unused space to hold the data record, and if the section does not have sufficient space, the database manager removes the selected data records according to a ranking function (col. 1, lines 49-57, col. 5, lines 16-34 and lines 53-57 and col. 7, lines 52-64). It would have been obvious to one having ordinary skill in the art at the time the invention was made to copy pages from secondary primary storage to the pages in the primary storage and vice-versa and to have the selected section contain sufficient unused space to hold the data record, and if the section does not have sufficient space, the database manager removes the selected data records according to a ranking function and to combine Nguyen's secondary storage with Nemes' copying pages from secondary storage to the pages in the primary storage and vice-versa and to have the selected section contain sufficient unused space to hold the data record, and if the section does not have sufficient space, to have the database manager remove selected data records according to a ranking function because such a modification in Nguyen would allow Nguyen's system to save space since the space in a database is limited to the amount of data contained in a certain number of records in the database. Nguyen and Nemes fails to teach, a client application, a caching subsystem, or a database manager for receiving requests from the client application to store a data record in the database data structure, wherein the database manager selects one of the sections and stores the data record in the selected section, but it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a client application, a caching subsystem, or a database manager for receiving requests from the client application to store a data record in the database data structure, wherein the database manager selects one of the sections and stores the data record in the selected section and in view of Nguyen's teachings of a database, storage, and records in col. 1, lines 33-48 and a data structure

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in col. 1, lines 49-50 and Nemes' teachings of records and storage to modify in Nguyen and Nemes because such a modification would allow their systems to have a database manager that is familiar with the content of the client application and a special memory subsystem in which frequently used data values are duplicated for quick access which is well known in the art. It is well known in the art that a memory cache stores the contents of frequently accessed RAM locations and the addresses where data items are stored and when the processor references an address, the cache checks to see whether it holds that address.

### ***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure.

Beier et al (US 5,881,379) disclosed keyed database records.

Doktor (US 5,826,259) disclosed voluminous data bases of large, commercial data repositories.

Eberhard et al (US 6,003,022) disclosed partial definitions of tables, transactions, and applications.

Damerau (US 5,390,359) disclosed a record stored in the system when a hash function is applied to subsets of a key representing a record.

Guha (US 5,897,637) disclosed a secondary hash key independent from the primary hash key.


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### Inquiries

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ella Colbert whose telephone number is 703-308-7064. The examiner can normally be reached on Monday-Thursday from 6:30 am -5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vincent Millin can be reached on 703-308-1038. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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E. Colbert  
May 17, 2004